

# Memorandum



**DATE:** April 5, 2002  
**TO:** Study Committee  
**FROM:** TMP Update Staff and Consultant Team  
**SUBJECT:** Phase 2 Multimodal Corridors Focus Area

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**Multimodal Corridors Focus Area.** The 1996 Transportation Management Plan identified ten multimodal corridors within the City of Boulder. Because of their importance as primary travel corridors and locations of trip activity, multimodal corridors are one of the four primary focus areas identified for the TMP update, along with Travel Demand Management, Regional Travel, and Funding.

As defined in the Boulder TMP Project Timeline, the Policy Refinement phase of the TMP update is intended to define the best indicators for estimating multimodal travel.

The multimodal corridor assessment contains three work efforts as follows:

1. **Develop Corridor Indicators:** Indicators for determining multimodal corridor travel must contain four elements. First, they must be relevant. Second, they must be easy to understand. Third, indicators must be reliable. Fourth, information for determining the indicators must be easily accessible and available. Three categories of information will be collected for each corridor to develop appropriate indicators: transportation facilities or infrastructure, land use, and the corridor design elements. The data necessary to develop these indicators include mapping of information through available City GIS data, field surveys, and calculations.
2. **Define Travel Characteristics:** Document the current travel characteristics for each corridor.
3. **Establish Existing Correlations:** Through comparisons between the potential indicator categories with actual travel characteristics, identify what indicators are the most important to predict multimodal trip activity.

The attached table presents in detail the indicator categories of measurement and travel characteristics. The table also presents draft recommendations of what data will be collected and the source of the data. This table does not include the correlation work effort. That information will be developed and presented upon completion of the first two efforts. During Phase 3, alternative transportation plans will be developed and multimodal travel estimates will be projected based on applying the correlated indicators.

**Steering Committee's Work.** To prepare for your work on multimodal corridors, please review the attached table on multimodal corridor indicators.

At its April 15<sup>th</sup> meeting, Steering Committee members will be asked to

- comment on the proposed process to develop indicators for estimating multimodal travel and
- brainstorm any additional indicators that might be relevant.

## Indicator: Facilities

Description	Data To Be Collected	Source of Data
Corridor Length	Corridor length in miles	GIS
Corridor Area in Square Miles	Corridor length times corridor width (1/2 mile)	GIS
Number of Travel Lanes	On GIS map, identify number of through travel lanes by block	GIS with field verification
Bike Lanes	Map all bike lanes along corridor and streets connected to corridor.	GIS with field verification
Bike Lanes Percent Coverage	Calculation: Total linear miles of corridor bike lanes divided by corridor length	GIS calculation
Bicycle Network Assessment	Conduct Bicycle Compatibility Index type rating for the quality of the bicycle facility based on such factors as presence of bike lane, bike lane width, curb lane width and volume, presence of parking, and vehicle travel speed.	Field survey
Sidewalks	Map all sidewalks along corridor and streets connected to corridor.	GIS with field verification
Sidewalk Percent Coverage	Calculation: Total linear miles of corridor sidewalk divided by corridor length	GIS calculation
Number of Enhanced Crosswalks	Create map of locations where enhanced crosswalks have been installed. Create GIS overlay of enhanced crosswalks	Field survey
Pedestrian Network Assessment	Develop pedestrian rating system to examine pedestrian network regarding the directness of the pedestrian network, the continuity or completion of the network, the ability or ease from which to cross the corridor and a basic aesthetic evaluation process. Categories in a simple low, medium and high, or a 1 to 5 scale.	Conduct field survey to evaluate corridors pedestrian network by block or segment.
High Frequency Transit Service	Map all high frequency transit service	GIS
Regional Transit Service	Map all regional transit services	GIS
Bus Stops	Map all bus stops	GIS
Bus Stops Per Mile	Calculate bus stops per mile by corridor and segment of corridor with transit	GIS
Transit Productivity	Ridership per service hour	RTD
On Street Parking	Map corridor segments that have on street parking by type (parallel or diagonal). Create GIS overlay of parking information	Field survey.
Pay Parking	Map corridor segments that have pay parking. Create GIS overlay of pay parking information	Field survey.
Proximity to Open Space Corridors	DU's, jobs and retail square feet within ¼ mile and 1 mile of open space corridors.	GIS calculation
Access	Develop a range of access categories based on driveway access points per mile.	Field survey

### Indicator: Land Use

Description	Data To Be Collected	Source of Data
Dwelling Units (DU)	Dwelling units within ¼ mile of corridor	GIS calculation
Corridor Demographics	Population characteristics	Census
DU Density	DU's per square mile	GIS calculation
Jobs	Jobs within ¼ mile of corridor	GIS calculation
Jobs Per Dwelling Units	Jobs divided by dwelling units	GIS calculation
DU proximity to jobs	Dwelling units within ¼ mile of jobs	GIS calculation
Retail (1,000 Square Feet or Jobs)	Retail square feet or jobs within ¼ mile of corridor	GIS calculation
DU proximity to retail	Dwelling units within ¼ mile of retail	GIS calculation
Major Public Uses	Map of major public uses (University, Schools, Public Buildings, etc.)	GIS map with field verification
Proximity: DU's and Jobs	Number and percent of corridor DU's within ¼ mile, 1 mile and via high frequency transit with jobs	GIS calculation
Proximity: DU's and Retail	Number and percent of corridor DU's within ¼ mile, 1 mile and via high frequency transit with retail	GIS calculation
Proximity: DU's and Major Public Uses	Number and percent of corridor DU's within ¼ mile, 1 mile and via high frequency transit with major public uses	GIS calculation
Land/Building Value	Land and building assessed value per square feet	GIS calculation
Opportunity to change	Based on relative condition and stabilization of corridor, rating of potential to change (i.e. low, medium, high)	Field Survey
Recent Corridor Activity	Map of sales and/or major renovations within the past two years.	GIS

### Indicator: Design

Description	Data To Be Collected	Source of Data
Building setback	Average building setback in feet	Field Survey
Sidewalk distance from street	Attached, detached, with/without parking separation	Field Survey
Tree Canopy	Size and extent of tree plantings	Field Survey
Integration of public sidewalk with development	Adjacent use sidewalk connections with public sidewalks (front door, sidewalk to entry, sidewalk to parking lot)	Field Survey
Porosity	Number of intersecting streets per mile along corridor	Count from map and field check
TOD/POD	Adjacent development type – Mixed use or single use	GIS calculation
Aesthetics	Pedestrian street furniture and amenities	Field Survey
Visual Interests	Visual activity along corridor	Field Survey

## Travel Characteristics

Description	Data To Be Collected	Source of Data
Daily Volume	Daily volume by link along corridor	City traffic count program
Peak Hour Volume (Along Corridor)	a.m. and p.m. peak hour directional counts at key intersections traveling along the corridor	City intersection turn volumes
Peak Hour Volume (Crossing Corridor)	a.m. and p.m. peak hour directional counts at key intersections	City intersection turn volumes
Peak Hour Volume Along/Crossing Ratio	Peak hour directional counts crossing corridor divided by directional counts along corridor	Calculation
Bicycle Volume (Along Corridor)	a.m. and p.m. peak hour directional bicycle counts at key intersection traveling along the corridor	City intersection turn volumes
Bicycle Volume (Crossing Corridor)	a.m. and p.m. peak hour directional bicycle counts at key intersection traveling across the corridor	City intersection turn volumes
Peak Hour Bicycle Volume Along/Crossing Ratio	Peak hour directional bicycle volumes crossing corridor divided by directional counts along corridor	Calculations
Pedestrian Volume (Along Corridor)	a.m. and p.m. peak hour directional pedestrian counts at key intersection traveling across the corridor	City intersection turn volumes
Pedestrian Volume (Crossing Corridor)	a.m. and p.m. peak hour directional bicycle counts at key intersection traveling across the corridor	City intersection turn volumes
Peak Hour Pedestrian Volume Along/Crossing Ratio	Peak hour directional pedestrian volumes crossing corridor divided by directional counts along corridor	Calculations
Transit Boardings	Transit on and off by stop	Transit survey data
Transit Volumes	Transit ridership by route and segment	Transit survey data
Dwelling Units with transit access	Dwelling Units within 1/4 Mile	GIS calculation
Jobs with transit access	Jobs within 1/4 mile	GIS calculation
Retail with transit access	Retail within 1/4 mile	GIS calculation
Vehicle Travel Time	Travel time survey by direction during a.m. and p.m. peak hours	Past data collection or field survey
Bus Travel Time	Travel time per RTD stop schedule during a.m. and p.m. peak hours.	RTD time schedule
Bus/Vehicle Travel Time Ratio	Transit travel time divided by vehicle travel time	Calculation
Auto Level of Service – Arterials	GIS map of daily volume divided by arterial capacity ratio and LOS conversion	Map in GIS, add volume and capacity attributes
Auto Level of Service – Intersections	a.m. and p.m. peak hour intersection levels of service from City count and intersection LOS sheets.	City